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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,153	05/11/2001	Laurence J. Newell	20852-05133	9449
758	7590	09/20/2005	EXAMINER	
FENWICK & WEST LLP SILICON VALLEY CENTER 801 CALIFORNIA STREET MOUNTAIN VIEW, CA 94041			BELLO, AGUSTIN	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/854,153

Applicant(s)

NEWELL ET AL.

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 2/
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7/18/04.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 4/2/04 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of the applications cited has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodell (U.S. Patent No. 4,768,186).

Regarding claim 1 and 7, Bodell teaches an optical fiber communications system including an optical fiber, a method for compensating for dispersion effects in the optical fiber, the method comprising: receiving at least two low-speed channels (e.g. outputs of reference numeral 1 in Figure 1), each low-speed channel allocated a different frequency band of an optical fiber communications system for transmission across the communications system (column 1 lines 25-33); adjusting a power of each low-speed channel to compensate for attenuation caused by dispersion (column 6 lines 1-8); and frequency division multiplexing (via multiplexer 6 in Figure 1) the power-adjusted low-speed channels to produce an electrical high-speed channel for transmission across the communications system. Bodell differs from the claimed invention in that Bodell fails to specifically teach for each low-speed channel, estimating an attenuation

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caused by dispersion resulting from transmission of the low-speed channel across the optical fiber in the frequency band allocated to the low-speed channel. However, Bodell appears to suggest estimating the attenuation of the communication system via a pilot carrier signal for monitoring, adjustment, and alarm purposes (column 2 lines 43-49). Furthermore, Bodell teaches that the powers of certain frequencies are improved, thereby compensating for losses experienced by certain frequencies (column 6 lines 1-23). One skilled in the art would have been motivated to estimate the attenuation of the communications system for each of the low-speed channels in order to compensate for the attenuation presented to certain channels as suggested by Bodell. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to estimate the attenuation of the communications system for each of the low-speed channels and compensate for the estimated attenuation of the communications system via adjustment of the power of each low-speed channel.

Regarding claims 2 and 8, Bodell differs from the claimed invention in that Bodell fails to specifically teach that the step of adjusting a power of each low-speed channel comprises applying a gain to each low-speed channel which is equal in magnitude to the estimated attenuation for that low-speed channel. One skilled in the art would clearly have recognized that in order to compensate for the attenuation experienced by the low speed channels one would have matched the gain applied to the low speed channels with the magnitude of the estimated attenuation, thereby nulling the attenuation levels. One skilled in the art would have been motivated to match the gain and attenuation levels in order to fully compensate the low speed channels for the estimated attenuation of the system. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to adjust the power of each low-speed

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channel by applying a gain to each low-speed channel, which is equal in magnitude to the estimated attenuation for that low-speed channel.

Regarding claims 3 and 9, Bodell differs from the claimed invention in that Bodell fails to specifically teach that the step of adjusting a power of each low-speed channel comprises applying a constant gain to each low-speed channel which is equal in magnitude to the estimated attenuation at a center frequency of the frequency band allocated to the low-speed channel. However, as discussed above it would have been obvious to one skilled in the art to match the magnitude of the estimated attenuation with the magnitude of the gain applied to the low speed channels. Furthermore, one skilled in the art would clearly have recognized that since the low speed channels are divided into frequency bands, most of the attenuation would have occurred at the center frequency, thereby motivating one skilled in the art to apply a constant gain of a magnitude equal to the estimated attenuation to the center frequency of the frequency band. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to adjust the power of each low-speed channel by applying a constant gain to each low-speed channel which is equal in magnitude to the estimated attenuation at a center frequency of the frequency band allocated to the low-speed channel.

Regarding claims 4 and 10, Bodell teaches that the step of adjusting a power of each low-speed channel comprises applying a gain ramp to the low-speed channels (as seen in Figure 5).

Regarding claims 5, 6, 11, and 12 Bodell differs from the claimed invention in that Bodell fails to specifically teach that the step of estimating a gain for propagation through the optical fiber comprises estimating a gain due to chromatic dispersion or polarization mode dispersion for the frequency band allocated to the low-speed channel. However since the system

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of Bodell propagates a pilot signal which monitors the various characteristics of the transmission system and makes adjustments based on the measurements (column 2 lines 42-49), one skilled in the art would clearly have recognized that gain due to chromatic dispersion or polarization mode dispersion would have also been measured by the pilot signal, and power measurements made based upon the measurements. Furthermore, Bodell's main objective in propagating the pilot signal is to improve the quality of the signal transmission via adjustments made to certain frequencies based on monitoring results. One skilled in the art would have been motivated to measure the chromatic dispersion or polarization mode dispersion for the frequency band allocated to the low-speed channel in order to improve the quality of signal transmission. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to measure the chromatic dispersion or polarization mode dispersion for the frequency band allocated to the low-speed channel in order to estimate the gain of the communication system.

Response to Arguments

4. Applicant's arguments filed 4/2/04 have been fully considered but they are not persuasive. The applicant argues that Bodell fails to specifically teach that each low-speed symbol channels is allocated to a different frequency band within the optical high-speed channel. However, Bodell clearly teaches FDM and thus teaches that each low-speed symbol channels is allocated to a different frequency band. Furthermore, that Bodell teaches frequency modulation of the FDM signal is not enough to persuade the examiner that Bodell's different symbol channels do not occupy different frequency bands within the optical signals, since it is possible that Bodell's FM modulator modulates the optical signal at each of the frequencies in the

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frequency multiplexed signal. In other words, it could be that Bodell's FM modulator modulates the optical signal at each of the successive frequencies presented by FDM signal.

Conclusion

5. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB



AGUSTIN BELLO
PATENT EXAMINER